Injury Events

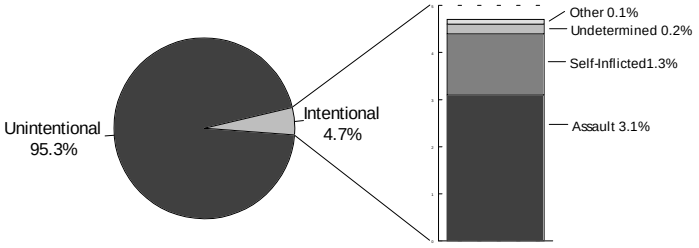
Epidemiology of Injury Events in Lancaster County

Overview of Injury Events

There were over 200,000 injury events reported in three local hospitals in Lancaster County between 1992 and 1999. More than 95 percent of these injuries were unintentional compared to 3.1 percent assault and 1.3 percent self-inflicted (Figure 19).

Figure 20 shows the gender distribution of injury events. Men (53.9%) were more likely to sustain injuries than were women (46.1%).

Figure 19: Proportion of Injuries by Intent
Lancaster County, 1992-1999

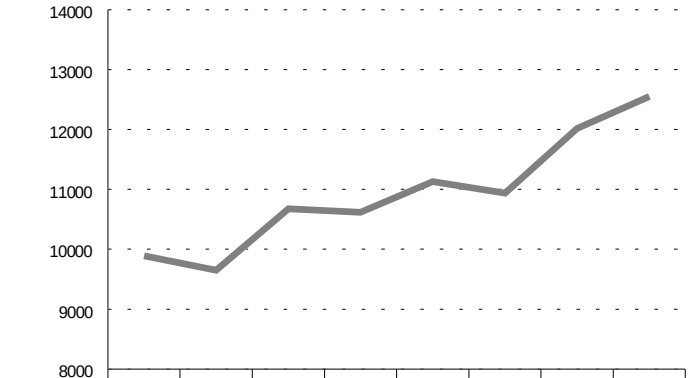


Trends

Overall Injury Event Trend

Unlike injury death trends (where fluctuations were so great that no overall trend was evident), injury events show an upward trend (Figure 20). Although we see yearly fluctuations with a rise and fall in injury events, the overall trend shows an increase in number and rate since 1992. Injury rates went up by 22 percent in 1999 from 1992. Interestingly, injury rates fell one year and rose the following year. For example, the rates went down in 1993, and then rose in 1994 . This pattern of fall and rise continued to occur during the years of record except in 1996 and 1999 when the rates did not go lower than those of the previous years.

Figure 20: Injury Trend
Lancaster County, 1992-1999 Age-Adjusted Rate*



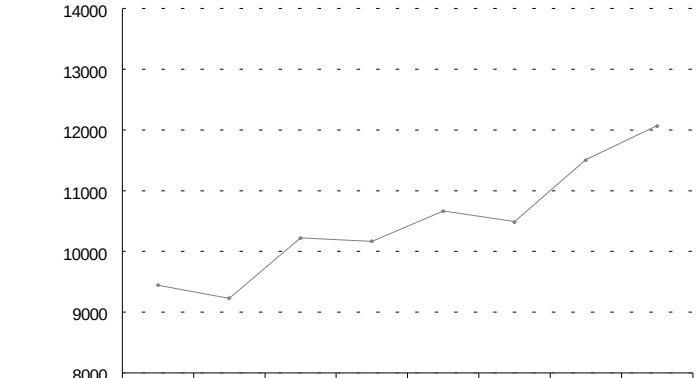
	1992	1993	1994	1995	1996	1997	1998	1999
All Injuries	9887.8	9650.7	10673.6	10615.3	11131.6	10937.5	12014.7	12548.4

*Per 100,000 Persons

Unintentional Injury Event Trend

Unintentional injury events in Lancaster County showed an overall increase in injury rates. (Figure 21) The pattern of these injuries is identical to that of all injuries shown in Figure 20.

Figure 21: Unintentional Injury Trend
Lancaster County, 1992-1999 Age-Adjusted Rate*



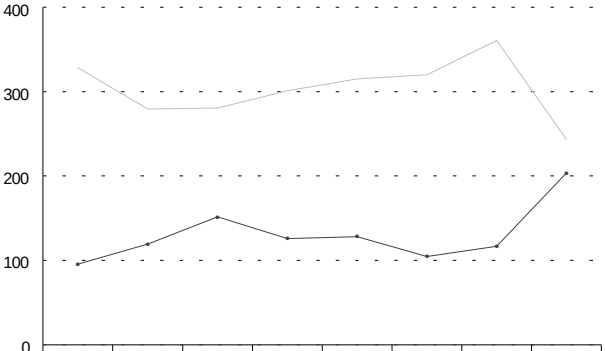
	1992	1993	1994	1995	1996	1997	1998	1999
Unintentional	9441.2	9225.3	10223.2	10164.4	10663.8	10491.6	11510.2	12070.9

*Per 100,000 Persons

Intentional Injury Event Trends

Figure 22 shows both self-inflicted and assault related injury trends between 1992 and 1999 in Lancaster County. Self-inflicted injury rates were inconsistent during the period of record. The rates began to decline after 1994, and continued to decline until 1997. However, there was a significant increase in self-inflicted injury rate in 1999, (up by 74 percent from 1998). A 58.6 percent of increase in self-inflicted injury rates was also observed from 1992 to 1994.

Figure 22: Intentional Injury Trend
Lancaster County, 1992-1999 Age-Adjusted Rate*



	1992	1993	1994	1995	1996	1997	1998	1999
Self-Inflicted	95.5	119.2	151.5	126	128.2	104.7	116.8	203.8
Assault	328.3	279.6	280.7	301.1	315.2	320.1	360.7	243.6

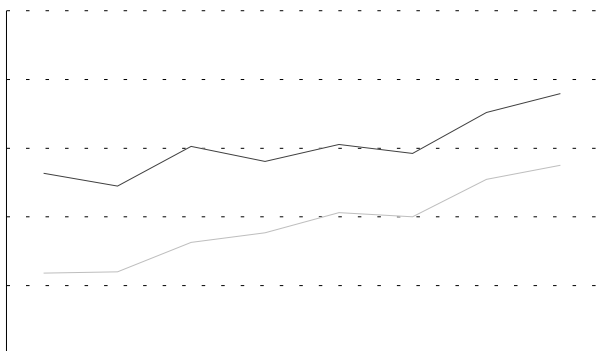
*Per 100,000 Persons

The year 1999 witnessed the lowest rate for assault injuries (243.6/105). Another decrease in assault injury rates was also observed in 1993, when it fell by 15 percent. However, except for 1993 and 1999, the assault rates continued to gradually increase every year.

Injury Event Trends by Gender

In general, both men and women have shown an increase in injury rates (Figure 23). The rates for men show more yearly fluctuations of rise and fall, whereas female rates continued to show gradual increase (except 1997, when it declined slightly). The injury rates for men increased by 21 percent compared with 38 percent for women since 1992.

Figure 23: Injury Trend by Gender
Lancaster County, 1992-1999 Gender-Specific Rate*



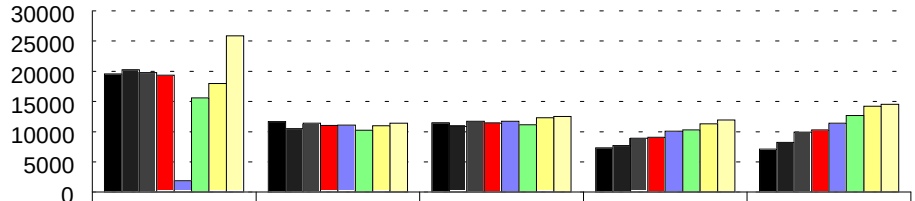
	1992	1993	1994	1995	1996	1997	1998	1999
Male	11272.6	10898.2	12051.7	11616.8	12108.7	11846.4	13042.8	13587
Female	8360.6	8394.1	9258.5	9539.9	10118.8	10006.6	11090	11502.5

*Per 100,000 Population

Injury Event Trends by Age

No substantial change in rates was observed in children aged 1-14 and young adults aged 15-34 years during the time of record (Figure 24). Overall, there was a slight decline in the rates among 1-14 age group. Children less than a year old experienced a gradual decline in rates from 1993 to 1996. The lowest rates were in 1996. However, the rates have been rising steadily since 1996 among this age group. The injury rates among 35 years and older showed a steady upward trend. In 1999, Lancaster County had the highest injury rates among all age groups.

Figure 24: Injury Trend by Age Category
Lancaster County, 1992-1999, Age-Specific Rates*



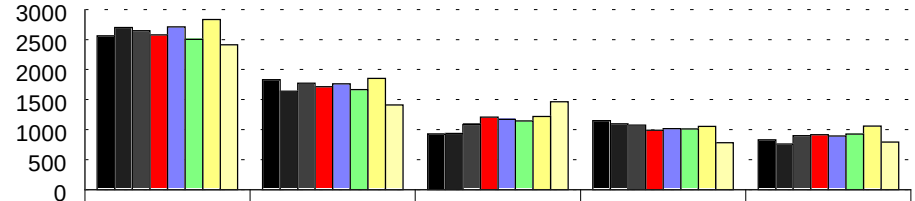
	Infants <1	Children 1-14	Young Adults 15-34	Adults 35-64	Older Adults 65+
1992	19570.8	11681	11477.8	7326.9	7113.3
1993	20279.7	10535.3	10888.6	7705.4	8209.5
1994	19758.1	11408.2	11701.1	8906.6	9923
1995	19338.3	11041.2	11425.3	9046.6	10319.2
1996	1862.9	11080.7	11719.5	10081.9	11398
1997	15562.7	10241.6	11154.2	10307.2	12691.8
1998	17960.7	10981.8	12325.9	11328.9	14237.8
1999	25877.2	11396.3	12493.4	11936.7	14555

*Per 100,000 Population

Injury Event Trends by Cause

Figure 25 shows the five leading causes of injury and their trends. In the previous section we saw that motor vehicle traffic was the leading cause of injury deaths, however falls were responsible for causing the most injury events in Lancaster County. Struck by/against was the second leading cause of injuries except for 1999, when MVT traffic became the second leading cause of injuries. In general, MVT was the third leading cause of injuries during the period of record. Cut/pierce and overexertion were, in general, the fourth and fifth leading cause of injuries respectively. In 1999, Lancaster County had the lowest incidence of injuries of all the causes (except MVT). MVT injury rates continued to increase , whereas cut/pierce showed a continued decrease. Injury rates associated with falls, struck by/against and overexertion showed very little fluctuation with no specific trends.

Figure 25: Injury Trend by the Leading Causes of Injury
Lancaster County, 1992-1999, Age-Adjusted Rates*



	Fall	Struck By, Against	Motor Vehicle Traffic	Cut/Pierce	Overexertion
1992	2560.5	1833.6	929	1152	830.4
1993	2698.2	1641.1	938.1	1100.3	762.1
1994	2644.5	1774.1	1089	1075.8	900.1
1995	2575.7	1717.1	1207.7	991	919.6
1996	2710.1	1761.7	1174.4	1018.1	895.2
1997	2504.5	1667.2	1144.6	1013.9	930
1998	2832.8	1852	1219.4	1054.4	1059
1999	2410.9	1413.2	1466.6	784.7	796.7

*Per 100,000 Population

Cause of Injury Events

Mechanisms or causes of injuries in Lancaster County are shown in Table 20. Unlike injury deaths where MVT was the leading cause of death, falls ($2530/10^5$) were the number one cause of injuries, followed by struck by/against ($1633/10^5$). Motor vehicle injuries with a rate of 1207 injuries per 100,000 population were the third leading cause of injuries. Leading causes of injuries are graphically depicted in figure 26.

Figure 26: Five Leading Causes of Injury
Lancaster County, 1992-1999

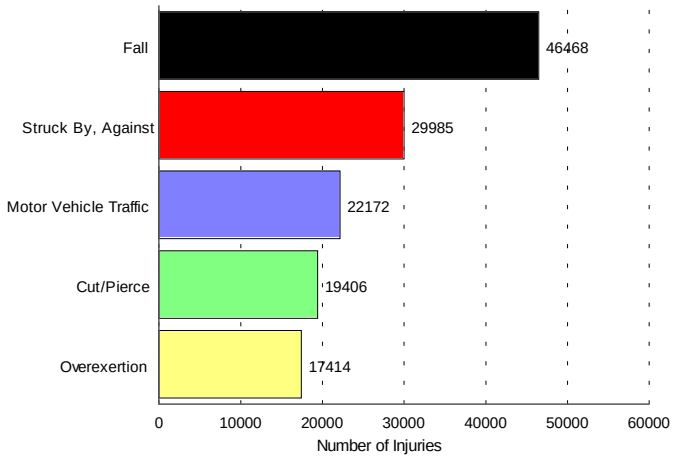


Table 20: Frequency and Proportion of Injury by Cause
Lancaster County, 1992-1999

Cause	Frequency	Proportion
Fall	46468	23.1%
Struck by, Against	29985	14.9%
Motor Vehicle, Traffic	22172	11.0%
Cut/Pierce	19406	9.7%
Overexertion	17414	8.7%
AE Drugs	7106	3.5%
AE Medical Care	6704	3.3%
Fire/Burn	6352	3.2%
Natural/Environmental	4862	2.4%
Pedal Cyclist, Other	4168	2.1%
Poisoning	4143	2.1%
Transport, Other	3169	1.6%
Machinery	2093	1.0%
Firearm	374	0.2%
Suffocation	360	0.2%
Pedestrian, Other	214	0.1%
Legal Intervention	176	0.1%
Drowning	139	0.1%
Operations of War	64	0.0%
Other*	25445	12.7%
Total	200814	100.0%

*Includes Other Specified and Classifiable, Other Specified Not EC, and Unspecified Deaths

Table 21: Frequency, Proportion, and Rate of Injury by Age
Lancaster County, 1992-1999

Age	Frequency	Proportion	Age-Specific Rate*
<1	5186	2.6%	19617.1
1-4	10851	5.4%	10416.2
5-9	12615	6.3%	9677.0
10-14	15096	7.5%	13165.5
15-19	21108	10.5%	14504.0
20-24	22757	11.3%	11119.6
25-34	36099	17.9%	10749.6
35-44	28897	14.4%	10300.0
45-54	16789	8.3%	10363.4
55-64	9634	4.8%	7264.3
65-74	8829	4.4%	8106.4
75-84	8235	4.1%	12508.0
85+	5137	2.6%	20614.1
Total	201233	100.0%	10957.5

*Per 100,000 Population

Injury Events and Age

Although the largest number of injuries (36,099) were sustained by the 25-36 age group, the highest age-specific injury rates were seen among 85+ and infants less than 1 year old followed by the 15-19 and the 10-14 age groups. Other age groups substantially suffering from injuries was the 75-84 (ranked 5th), the 20-24 (ranked 6th), and the 25-34 (ranked 7th).

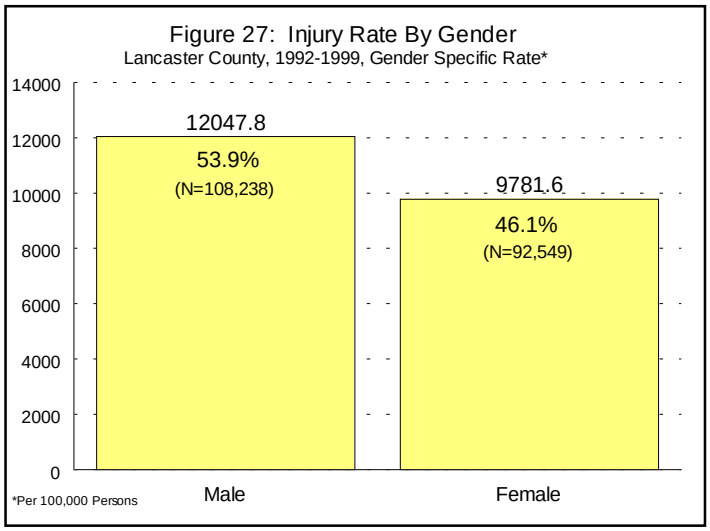
Injury Events and Gender

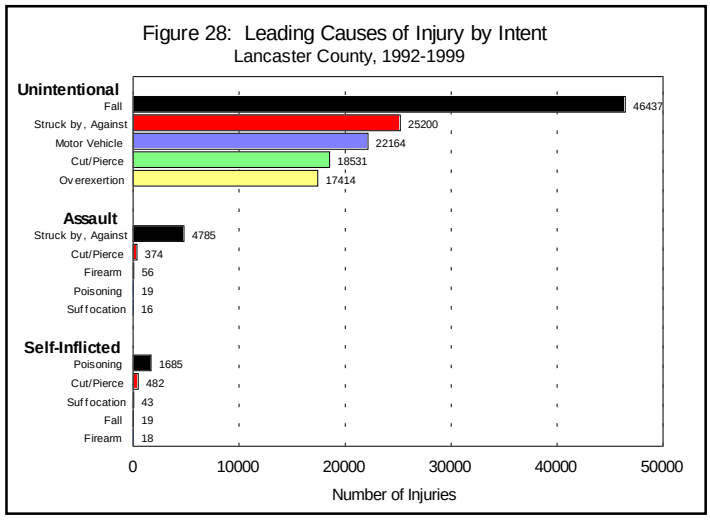
While injury death rate and frequency indicated that men were almost twice as likely to die as women, the difference for injury events was not as great. However, men (54%) were still more likely than women (46%) to experience injuries in Lancaster County.

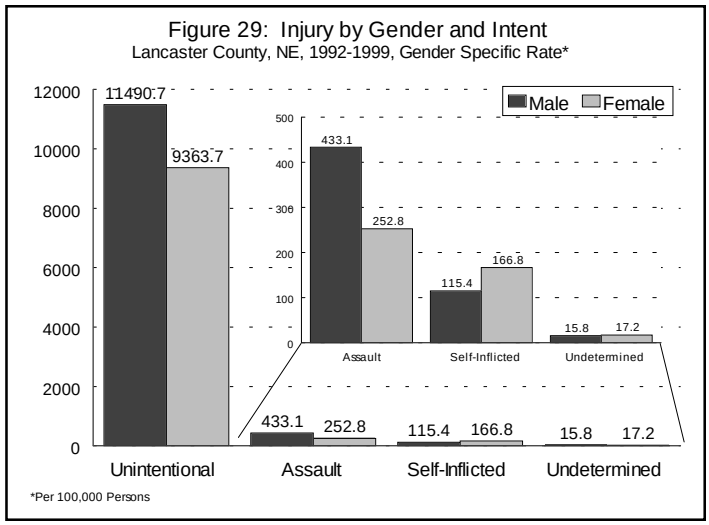
Intent of Injury Events

Intent of Injury and Cause

More than 95 percent of injury events were classified as unintentional, whereas 60 percent of injury deaths were unintentional. A little over three percent of all injuries resulted from assault, whereas 1.2 percent were self-inflicted. Figure 28 depicts the causes of injuries by intent. The leading causes of unintentional injuries were fall, struck by/against, MVT and overexertion. Poisoning was the major cause of self-inflicted injuries, whereas struck by/against was the main mechanism of assault injuries.







Intent of Injury and Age

Table 22 describes intent of injuries by each age group. Unintentional injuries were the leading cause of injuries among all age groups in Lancaster County. Assault related and self-inflicted injuries were ranked as the second leading cause of injuries among the 0-64 and the 65+ age groups respectively.

Table 22: Intent of Injury by Age
Lancaster County, 1992-1999 Age-Specific Rates*

	Age (In Years)												
Rank	Under 1	1-4	5-9	10-14	15-19	20-24	25-34	35-44	45-54	55-64	65-74	75-84	85+
1	Unintentional 19375.0 (5122)**	Unintentional 10340.4 (10772)	Unintentional 9601.0 (12516)	Unintentional 12746.9 (14616)	Unintentional 13342.7 (19418)	Unintentional 10237.1 (20951)	Unintentional 9964.1 (33461)	Unintentional 9683.4 (27167)	Unintentional 10033.8 (16255)	Unintentional 7147.4 (9479)	Unintentional 8054.1 (8772)	Unintentional 12462.5 (8205)	Unintentional 20541.9 (5119)
2	Assault 136.2 (36)	Assault 41.3 (43)	Assault 53.7 (70)	Assault 268.6 (308)	Assault 760.7 (1107)	Assault 651.8 (1334)	Assault 554.8 (1863)	Assault 385.7 (1082)	Assault 202.5 (328)	Assault 63.3 (84)	Self-Inflicted 29.4 (32)	Self-Inflicted 25.8 (17)	Self-Inflicted 64.2 (16)
3	Self-Inflicted 71.9 (19)	Self-Inflicted 20.2 (21)	Self-Inflicted 13.8 (18)	Self-Inflicted 124.7 (143)	Self-Inflicted 358.0 (521)	Self-Inflicted 196.9 (403)	Self-Inflicted 192.7 (647)	Self-Inflicted 195.7 (549)	Self-Inflicted 107.4 (174)	Self-Inflicted 41.5 (55)	Assault 18.4 (20)	Assault 10.6 (7)	Assault 8.0 (2)
4	Undetermin 34.0 (9)	Undetermin 12.5 (13)	Undetermin 8.4 (11)	Undetermin 17.4 (20)	Undetermin 26.8 (39)	Undetermin 16.1 (33)	Undetermin 22.0 (74)	Undetermin 21.7 (61)	Undetermin 13.0 (21)	Undetermin 10.6 (14)	Undetermin 4.6 (5)	Undetermin 7.6 (5)	Undetermin 0.0 (0)

**Age-Specific Rate Per 100,000 Population **Rate (Number of Injuries)*

Intent of Injury and Gender

Figure 29 shows the difference in injuries between men and women with regard to intent. Men ($11490.7/10^5$) were more likely to experience unintentional injuries than women ($9363.7/10^5$), whereas women ($166.8/10^5$) were more likely to sustain self-inflicted injuries than men ($115.4/10^5$). Men were 1.7 times more likely than women to sustain an injury from assault. Table 23 reveals intent of injury according to gender and age. Unintentional injuries were the leading injury events among both sexes and across all age groups followed by assault.

Table 23: Intent of Injury by Gender by Age
Lancaster County, 1992-1999 Gender and Age Specific Rates*

		Age (In Years)											
Gender	Rank	Under 1	1-4	5-9	10-14	15-19	20-24	25-34	35-44	45-54	55-64	65-74	75-84	85+
Male	1	Unintent. 21896.8 (2787)**	Unintent. 11724.8 (6293)	Unintent. 10974.0 (7249)	Unintent. 14946.1 (8814)	Unintent. 15818.4 (11329)	Unintent. 12093.8 (12543)	Unintent. 11460.9 (19545)	Unintent. 10622.4 (14966)	Unintent. 10037.4 (8012)	Unintent. 6943.2 (4430)	Unintent. 7380.9 (3515)	Unintent. 11403.9 (2611)	Unintent. 18764.4 (1139)
	2	Assault 172.8 (22)	Assault 57.8 (31)	Assault 66.6 (44)	Assault 335.8 (198)	Assault 1005.3 (720)	Assault 826.3 (857)	Assault 655.0 (1117)	Assault 452.8 (638)	Assault 251.8 (201)	Assault 79.9 (51)	Self-Inflicted 29.4 (14)	Assault 17.5 (4)	Self-Inflicted 32.9 (2)
	3	Self-Inflicted 102.1 (13)	Self-Inflicted 20.5 (11)	Self-Inflicted 19.7 (13)	Self-Inflicted 78.0 (46)	Self-Inflicted 217.8 (156)	Self-Inflicted 170.7 (177)	Self-Inflicted 171.2 (292)	Self-Inflicted 151.9 (214)	Self-Inflicted 90.2 (72)	Self-Inflicted 37.6 (24)	Assault 16.8 (8)	Self-Inflicted 13.1 (3)	Assault 0.0 (0)
	4	Undetermin 31.4 (4)	Undetermin 7.5 (4)	Undetermin 10.6 (7)	Undetermin 10.2 (6)	Undetermin 18.2 (13)	Undetermin 18.3 (19)	Undetermin 19.9 (34)	Undetermin 22.0 (31)	Undetermin 13.8 (11)	Undetermin 11.0 (7)	Undetermin 8.4 (4)	Undetermin 8.7 (2)	Undetermin 0.0 (0)
Female	1	Unintent. 19384.6 (2335)**	Unintent. 8496.5 (4479)	Unintent. 8121.0 (5267)	Unintent. 10328.9 (5802)	Unintent. 10841.0 (8082)	Unintent. 8254.6 (8404)	Unintent. 8345.9 (13913)	Unintent. 8656.7 (12194)	Unintent. 9940.9 (8240)	Unintent. 7274.2 (5049)	Unintent. 8502.7 (5256)	Unintent. 12917.0 (5594)	Unintent. 20937.0 (3980)
	2	Assault 116.2 (14)	Assault 22.8 (12)	Assault 40.1 (26)	Assault 195.8 (110)	Assault 517.8 (386)	Assault 468.5 (477)	Assault 447.5 (746)	Assault 315.2 (444)	Assault 153.2 (127)	Assault 47.5 (33)	Self-Inflicted 29.1 (18)	Self-Inflicted 32.3 (14)	Self-Inflicted 73.6 (14)
	3	Self-Inflicted 49.8 (6)	Self-Inflicted 19.0 (10)	Self-Inflicted 7.7 (5)	Self-Inflicted 172.7 (97)	Self-Inflicted 489.6 (365)	Self-Inflicted 222.0 (226)	Self-Inflicted 213.0 (355)	Self-Inflicted 237.8 (335)	Self-Inflicted 123.1 (102)	Self-Inflicted 44.7 (31)	Assault 19.4 (12)	Assault 6.9 (3)	Assault 10.5 (2)
	4	Undetermin 41.5 (5)	Undetermin 17.1 (9)	Undetermin 6.2 (4)	Undetermin 24.9 (14)	Undetermin 34.9 (26)	Undetermin 13.8 (14)	Undetermin 24.0 (40)	Undetermin 21.3 (30)	Undetermin 12.1 (10)	Undetermin 10.1 (7)	Undetermin 1.6 (1)	Undetermin 6.9 (3)	Undetermin 0.0 (0)

**Age-Specific Rate Per 100,000 Population **Rate (Number of Injuries)*

Unintentional Injury Events

Unintentional Injuries and Cause

As stated above, unintentional injuries constitute more than 95 percent of all injuries in Lancaster County. Different causes of unintentional injuries are listed in Table 24. Approximately one fourth of all unintentional cases seen in the hospitals were due to fall, followed by struck by/against (13.2%), and MVT (11.6%). Some of the leading causes of injuries are also depicted in Figure 30.

Figure 30: Five Leading Causes of Unintentional Injury
Lancaster County, 1992-1999

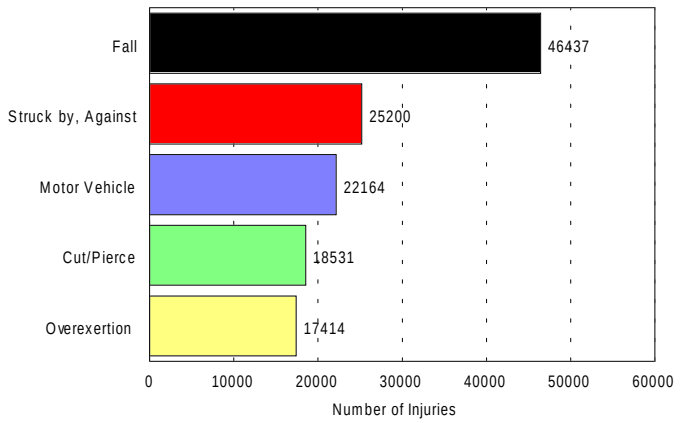


Table 24: Frequency and Proportion of Unintentional Injury by Cause
Lancaster County, 1992-1999

Cause	Frequency	Proportion	Crude Rate
Fall	46437	24.2%	2530.6
Struck by, Against	25200	13.2%	1373.3
Motor Vehicle, Traffic	22164	11.6%	1207.8
Cut/Pierce	18531	9.7%	1009.9
Overexertion	17414	9.1%	949.0
AE Drugs	7106	3.7%	387.2
AE Medical Care	6704	3.5%	365.3
Fire/Burn	6324	3.3%	344.6
Natural/Environmental	4862	2.5%	265.0
Pedal Cyclist, Other	4168	2.2%	227.1
Transport, Other	3169	1.7%	172.7
Poisoning	2291	1.2%	124.8
Machinery	2093	1.1%	124.8
Suffocation	296	0.2%	16.1
Firearm	280	0.1%	15.3
Pedestrian, Other	214	0.1%	11.7
Drowning	139	0.1%	7.6
Operations of War	64	0.0%	3.5
Other*	24100	12.6%	1313.3
Total	191556	100.0%	10438.8

*Includes Other Specified and Classifiable, Other Specified Not EC, and Unspecified Deaths

Unintentional Injury and Age

The unintentional injuries by age are shown in Table 25, and the leading causes of unintentional injuries by age are noted in Table 26. More than 50 percent of all unintentional injuries were sustained by 15-44 year old individuals, followed by individuals in the 1-14 age group (21.7%).

The leading cause of unintentional injury in children less than 1 year old was falls (39%). Falls were also the leading cause of injuries among children 1-14 years old and adults above 25 years of age. Although motor vehicle traffic was only the third leading cause of injury in Lancaster County, it was the leading cause of injuries among 15-24 age group, and second leading cause of injuries among 25-64 age group (Table 27). The number of injuries due to MVT increased with age from $208/10^5$ among less than 1 year old to $4829/10^5$ among 25-34 years, then started to decline (see Appendix V).

Other categories worth mentioning are overexertion, adverse effects of medical care, adverse effects of drugs, and unspecified causes.

Table 25: Frequency, Proportion, and Rate of Unintentional Injury by Age
Lancaster County, 1992-1999

Age	Frequency	Proportion	Age-Specific Rate*
<1	5122	2.7%	19375.0
1-4	10772	5.6%	10340.4
5-9	12516	6.5%	9601.0
10-14	14616	7.6%	12746.9
15-19	19418	10.1%	13342.7
20-24	20951	10.9%	10237.1
25-34	33461	17.4%	9964.1
35-44	27167	14.2%	9683.4
45-54	16255	8.5%	10033.8
55-64	9479	4.9%	7147.4
65-74	8772	4.6%	8054.1
75-84	8205	4.3%	12462.5
85+	5119	2.7%	20541.9
Total	191853	100.0%	10446.8

*Per 100,000 Population

Table 26: Five Leading Causes* of Unintentional Injury by Age
Rate and Number of Injuries in Lancaster County, 1992-1999

	Age (In Years)												
Rank	Under 1	1-4	5-9	10-14	15-19	20-24	25-34	35-44	45-54	55-64	65-74	75-84	85+
1	Fall 7531.4 (1991)**	Fall 3607.4 (3758)	Fall 3096.0 (4036)	Fall 3404.7 (3904)	Struck By or Against 2679.8 (3900)	Motor Vehicle, Traffic 1907.6 (3904)	Fall 1555.6 (5224)	Fall 1823.9 (5117)	Fall 2281.4 (3696)	Fall 1994.4 (2645)	Fall 2771.9 (3019)	Fall 5894.8 (3881)	Fall 13290.6 (3321)
2	Struck By or Against 2190.2 (579)	Struck By or Against 1697.2 (1768)	Struck By or Against 1897.0 (2473)	Struck By or Against 3175.4 (3641)	Motor Vehicle, Traffic 2679.1 (3899)	Struck By or Against 1488.8 (3047)	Motor Vehicle, Traffic 1438.0 (4829)	Over-exertion 1245.8 (3495)	Motor Vehicle, Traffic 1188.2 (1925)	Motor Vehicle, Traffic 674.9 (895)	AE Drugs 1075.2 (1171)	AE Drugs 1761.9 (1160)	AE Drugs 2026.5 (505)
3	Fire/Burn 1762.7 (466)	Cut/Pierce 672.0 (700)	Cut/Pierce 938.9 (1224)	Cut/Pierce 1151.2 (1320)	Fall 1987.9 (2893)	Fall 1446.8 (2961)	Over-exertion 1313.8 (4412)	Motor Vehicle, Traffic 1133.8 (3181)	Over-exertion 1022.2 (1656)	AE Medical Care 673.3 (893)	AE Medical Care 1025.6 (1117)	AE Medical Care 1318.4 (868)	AE Medical Care 1244.0 (310)
4	Poisoning 991.1 (262)	Natural/ Environ-mental 566.4 (590)	Pedal Cyclist, Other 714.2 (931)	Pedal Cyclist, Other 988.1 (1133)	Cut/Pierce 1445.7 (2104)	Cut/Pierce 1424.8 (2916)	Struck By or Against 1284.3 (4313)	Cut/Pierce 1069.0 (2999)	Cut/Pierce 919.7 (1490)	Over-exertion 580.6 (770)	Motor Vehicle, Traffic 578.4 (630)	Motor Vehicle, Traffic 688.1 (453)	Transport, Other 569.8 (142)
5	Cut/Pierce 907.9 (240)	Poisoning 497.2 (518)	Motor Vehicle, Traffic 613.7 (800)	Over-exertion 916.6 (1051)	Over-exertion 1344.7 (1957)	Over-exertion 1157.5 (2369)	Cut/Pierce 1235.2 (4148)	Struck By or Against 1062.9 (2982)	Struck By or Against 834.6 (1352)	AE Drugs 565.5 (750)	Cut/Pierce 408.6 (445)	Over-exertion 366.1 (241)	Motor Vehicle, Traffic 501.6 (125)

*Excludes Other Specified and Classifiable, Other Specified Not EC, and Unspecified Injury Events

**Age-Specific Rate Per 100,000 Population (Number of Injuries)

Struck by/against and MVT were both the leading cause of injuries among the 15-19 age group. Struck by/against was also the second leading cause of unintentional injuries among 0-19 age group after fall, and among the 20-24 age group after MVT. Injuries due to adverse effects of medical care and drugs are the second leading cause of injuries (after fall) among adults 55 and older. These are one of the most preventable injuries!

Unintentional Injury and Gender

Figure 31 reveals the difference associated with unintentional injuries among men and women of Lancaster County. More men (n=103,075) than women (n=88,456) experienced unintentional injuries.

Table 27 shows falls as the leading cause of unintentional injuries among both men and women. The gender-specific rates suggest that women were more likely to get injured due to falls and MVT than were men. The MVT was the second leading cause of injuries among women, whereas it was the fourth leading cause of injury among men. Struck by/against with n=12,335 injuries was ranked as the third leading cause of injuries among women, whereas it was the fourth leading cause of unintentional injuries among men. Overexertion and cut/pierce were the fourth and fifth leading causes of unintentional injuries among women, respectively.

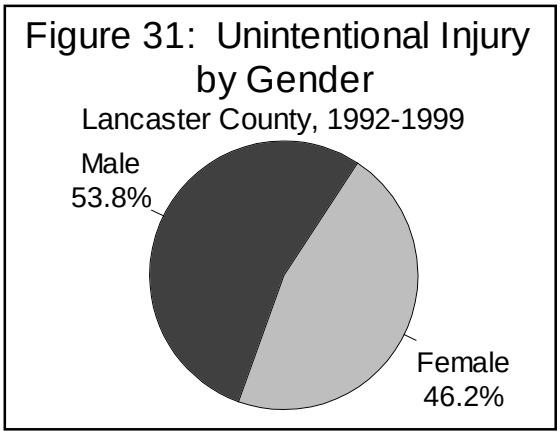


Table 27: Frequency and Proportion of Unintentional Injury by Gender by Cause
Lancaster County, 1992-1999

Male				Female			
Cause	Number	Percent	Rate**	Cause	Number	Percent	Rate**
Fall	21213	20.6%	2351.6	Fall	25221	28.5%	2703.3
Struck by, Against	16756	16.3%	1857.5	Motor Vehicle, Traffic	12335	13.9%	1322.1
Cut/Pierce	12311	11.9%	1364.8	Struck by, Against	8438	9.5%	904.4
Motor Vehicle, Traffic	9826	9.5%	1089.3	Overexertion	7819	8.8%	838.1
Overexertion	9594	9.3%	1063.6	Cut/Pierce	6216	7.0%	666.3
Fire/Burn	3646	3.5%	404.2	AE Drugs	4493	5.1%	481.6
AE Medical Care	3040	2.9%	337.0	AE Medical Care	3664	4.1%	392.7
Pedal Cyclist, Other	3006	2.9%	333.2	Fire/Burn	2678	3.0%	287.4
AE Drugs	2613	2.5%	142.2	Natural/Environmental	2348	2.7%	251.7
Natural/Environmental	2513	2.4%	278.6	Transport, Other	1458	1.6%	156.3
Machinery	1725	1.7%	191.2	Poisoning	1167	1.3%	125.1
Transport, Other	1710	1.7%	189.6	Pedal Cyclist, Other	1162	1.3%	124.6
Poisoning	1124	1.1%	124.6	Machinery	368	0.4%	39.4
Firearm	193	0.2%	21.4	Suffocation	143	0.2%	15.3
Suffocation	153	0.1%	17.0	Pedestrian, Other	104	0.1%	11.2
Pedestrian, Other	110	0.1%	12.9	Firearm	87	0.1%	9.3
Drowning	92	0.1%	10.2	Drowning	47	0.1%	5.0
Operations of War	30	0.0%	3.3	Operations of War	34	0.0%	3.6
Other*	13420	13.0%	1487.7	Other*	10674	12.1%	1144.1
Total	103075	100.0%	11426.6	Total	88456	100.0%	9481.1

*Includes Other Specified and Classifiable, Other Specified Not EC, and Unspecified Deaths
**Gender Specific Rate

Falls were the most common cause of unintentional injuries for both sexes. The injury rate due to fall for women was 2665.6/10^5 compared with 2361.2/10^5 for men. The injury rate associated with MVT for women (1303.7/10^5) was also higher than that of men (1093.7/10^5). More injuries due to adverse effects of medical care and drugs occurred among women (862.2/10^5) than among men (629.2/10^5). Unspecified injury rates were also higher among women than men.

Table 28 lists five leading causes of unintentional injuries by age and gender. Interestingly, falls were not the leading cause of injuries among certain age groups of men and women. For example, struck by/against was the leading cause of injuries among males between 10 and 34 years of age, and MVT among 15 to 24 years old women. For men, falls were the fourth leading cause of injuries among 20-24 year age-group, and third leading cause of injuries among 25-34 year age group. Women in Lancaster County were more affected by MVT than were men. MVT was the second leading cause of injuries among women between 25-64 years, whereas it was the third leading cause of injuries among 15-24 year old men. Struck by/ against, the second leading cause of injuries among young children, affected more male children than female children.

Intentional Injury Events

As noted, intentional injuries contributed to only a small proportion (less than 5%) of overall injury events in Lancaster County between 1992 and 1999 (Figure 19). Intentional injuries are discussed as self-inflicted and assault injuries.

Table 28: Five Leading Causes* of Unintentional Injury by Gender by Age

Lancaster County, 1992-1999 Gender and Age Specific Rates**

		Age (In Years)												
Gender	Rank	Under 1	1-4	5-9	10-14	15-19	20-24	25-34	35-44	45-54	55-64	65-74	75-84	85+
Male	1	Fall 8752.4 (1114)***	Fall 4167.9 (2237)	Fall 3318.4 (2192)	Struck By or Against 4285.1 (2527)	Struck By or Against 3940.3 (2822)	Struck By or Against 2117.4 (2196)	Struck By or Against 1671.2 (2850)	Fall 1688.5 (2379)	Fall 1916.8 (1530)	Fall 1609.6 (1027)	Fall 2011.6 (958)	Fall 4555.4 (1043)	Fall 10626.0 (645)
	2	Struck By or Against 2529.9 (322)	Struck By or Against 2105.4 (1130)	Struck By or Against 2414.6 (1595)	Fall 3734.0 (2202)	Fall 2291.3 (1641)	Cut/Pierce 2021.9 (2097)	Cut/Pierce 1665.3 (2840)	Overexertion 1450.8 (2044)	Cut/Pierce 1170.1 (934)	Cut/Pierce 652.0 (416)	AE Drug 1049.9 (500)	AE Drug 1707.7 (391)	AE Drug 2092.3 (127)
	3	Fire/Burn 2160.6 (275)	Cut/Pierce 821.7 (441)	Cut/Pierce 1153.6 (762)	Cut/Pierce 1495.6 (882)	Motor Vehicle, Traffic 2178.2 (1560)	Motor Vehicle, Traffic 1729.7 (1794)	Fall 1545.1 (2635)	Struck By or Against 1372.0 (1933)	Overexertion 1084.9 (866)	AE Medical Care 609.7 (389)	AE Medical Care 1033.1 (492)	AE Medical Care 1659.7 (380)	AE Medical Care 1696.9 (103)
	4	Cut/Pierce 1123.5 (143)	Natural/ Environmental 609.3 (327)	Pedal Cyclist, Other 876.5 (579)	Pedal Cyclist, Other 1405.8 (829)	Cut/Pierce 2077.7 (1488)	Fall 1552.3 (1610)	Overexertion 1495.9 (2551)	Cut/Pierce 1348.6 (1900)	Struck By or Against 1023.5 (817)	Overexertion 609.7 (389)	Cut/Pierce 588.0 (280)	Motor Vehicle, Traffic 733.8 (168)	Motor Vehicle, Traffic 675.5 (41)
	5	Poisoning 1005.7 (128)	Poisoning 555.2 (298)	Motor Vehicle, Traffic 652.5 (431)	Overexertion 819.0 (483)	Overexertion 1559.6 (1117)	Overexertion 1401.9 (1454)	Motor Vehicle, Traffic 1322.3 (2255)	Motor Vehicle, Traffic 1033.4 (1456)	Motor Vehicle, Traffic 953.4 (761)	Motor Vehicle, Traffic 561.1 (358)	Motor Vehicle, Traffic 497.7 (237)	Cut/Pierce 436.8 (100)	NA
Female	1	Fall 7280.6 (877)**	Fall 2885.3 (1521)	Fall 2843.2 (1844)	Fall 3029.9 (1702)	Motor Vehicle, Traffic 3134.8 (2337)	Motor Vehicle, Traffic 2072.5 (2110)	Fall 1553.0 (2589)	Fall 1943.0 (2373)	Fall 2611.9 (2165)	Fall 2331.1 (1618)	Fall 3334.1 (2061)	Fall 6553.2 (2838)	Fall 14029.9 (2667)
	2	Struck By or Against 2133.6 (257)	Struck By or Against 1210.3 (638)	Struck By or Against 1353.8 (878)	Struck By or Against 1983.2 (1114)	Fall 1678.1 (1251)	Fall 1327.0 (1351)	Motor Vehicle, Traffic 1544.0 (2574)	Motor Vehicle, Traffic 1223.9 (1724)	Motor Vehicle, Traffic 1404.3 (1164)	Motor Vehicle, Traffic 773.7 (537)	AE Drug 1085.5 (671)	AE Drug 1775.7 (769)	AE Drug 1988.5 (378)
	3	Fire/Burn 1585.6 (191)	Overexertion 517.9 (273)	Cut/Pierce 712.3 (462)	Overexertion 1011.2 (568)	Struck By or Against 1443.3 (1076)	Overexertion 898.7 (915)	Overexertion 1116.3 (1861)	Overexertion 1030.1 (1451)	Overexertion 953.1 (790)	AE Medical Care 726.1 (504)	AE Medical Care 1011.1 (625)	AE Medical Care 1126.8 (488)	AE Medical Care 1088.9 (207)
	4	Poisoning 1079.2 (130)	Natural/ Environmental 498.9 (263)	Motor Vehicle, Traffic 568.9 (369)	Motor Vehicle, Traffic 867.0 (487)	Overexertion 1125.4 (839)	Struck By or Against 834.9 (850)	Struck By or Against 877.0 (1462)	Cut/Pierce 779.5 (1098)	Cut/Pierce 670.8 (556)	AE Drug 646.9 (449)	Motor Vehicle, Traffic 635.8 (393)	Motor Vehicle, Traffic 658.1 (285)	Transport, Other 620.7 (118)
	5	Motor Vehicle, Traffic 938.1 (113)	Cut/Pierce 491.3 (259)	Pedal Cyclist, Other 542.7 (352)	Cut/Pierce 779.7 (438)	Cut/Pierce 826.3 (616)	Cut/Pierce 803.5 (818)	Cut/Pierce 783.4 (1306)	Struck By or Against 744.0 (1048)	Struck By or Against 644.2 (534)	Overexertion 548.9 (381)	Overexertion 440.0 (272)	Overexertion 385.6 (167)	Motor Vehicle, Traffic 441.9 (84)

**Excludes Other Specified and Classifiable, Other Specified Not EC, and Unspecified Deaths* ***Age-Specific Rate Per 100,000 Population* ****Rate (Number of Injuries)*

Self-Inflicted Injuries

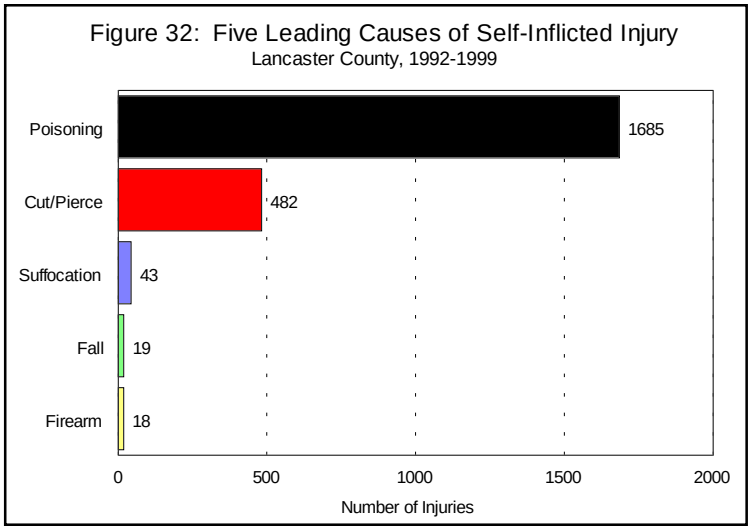
Self-Inflicted Injuries and Cause

Table 29 lists the mechanisms by which self-inflicted injuries were caused. There were a total of 2,514 (1.3%) self-inflicted injuries in Lancaster County between 1992 and 1998. Unlike unintentional injuries where injuries were caused by more than 20 means, self-inflicted injuries were committed by less than eight means. Sixty-seven percent of self-inflicted injuries were caused by poisoning, compared with 19.2% by cut/pierce. Suffocation constituted a very small proportion of self-inflicted injuries (1.7%), whereas fall and firearms contributed to less than two percent of self-inflicted injuries. Figure 32 shows the leading causes of self-inflicted injuries.

Table 29: Frequency and Proportion of Self-Inflicted Injury by Cause
Lancaster County, 1992-1999

Cause	Frequency	Proportion
Poisoning	1685	67.0%
Cut/Pierce	482	19.2%
Suffocation	43	1.7%
Fall	19	0.8%
Firearm	18	0.7%
Fire/Burn	3	0.1%
Motor Vehicle, Traffic	1	0.0%
Other*	263	10.5%
Total	2514	100.0%

*Includes Other Specified and Classifiable, Other Specified Not EC, and Unspecified Deaths



Self-Inflicted Injury and Age

Eighty one percent of self-inflicted injuries were committed by the 15-44 age group (Table 30). Individuals falling in the 25-34 age category were ranked first with 25 percent followed by the 35-44 age group (21.0%) and children between 15 and 19 years old (19.9%). Self-inflicted injuries were uncommon among 1-9 and 55 and above age groups.The age-specific rates reveal the same pattern of injuries as the numbers.

Table 31 shows five leading causes of self-inflicted injuries among all age groups. Poisoning was the number one means of committing injuries across all age groups (except the 0-9 age group), followed by cut/pierce.

Table 30: Frequency, Proportion, and Rate of Self-Inflicted Injury by Age
Lancaster County, 1992-1999

Age	Frequency	Proportion	Age-Specific Rate*
<1	19	0.7%	71.9
1-4	21	0.8%	20.2
5-9	18	0.7%	13.8
10-14	143	5.5%	124.7
15-19	521	19.9%	358.0
20-24	403	15.4%	196.9
25-34	647	24.7%	192.7
35-44	549	21.0%	195.7
45-54	174	6.7%	107.4
55-64	55	2.1%	41.5
65-74	32	1.2%	29.4
75-84	17	0.7%	25.8
85+	16	0.6%	64.2
Total	2615	100.0%	142.4

*Per 100,000 Population

Table 31: Five Leading Causes* of Self-Inflicted Injury by Age
Rate and Number of Injuries in Lancaster County, 1992-1999

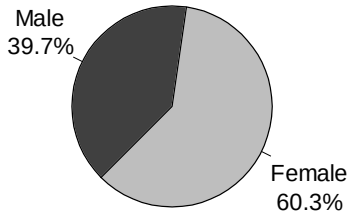
	Age (In Years)												
Rank	Under 1	1-4	5-9	10-14	15-19	20-24	25-34	35-44	45-54	55-64	65-74	75-84	85+
1	Poisoning 7.6 (2)**	Poisoning 2.9 (3)	Cut/Pierce 0.8 (1)	Poisoning 78.5 (90)	Poisoning 261.8 (381)	Poisoning 126.1 (258)	Poisoning 122.7 (412)	Poisoning 126.5 (355)	Poisoning 75.9 (123)	Poisoning 26.4 (35)	Poisoning 14.7 (16)	Poisoning 9.1 (6)	Poisoning 16.1 (4)
2	…	…	Suffocation 0.8 (1)	Cut/Pierce 19.2 (22)	Cut/Pierce 59.8 (87)	Cut/Pierce 51.8 (106)	Cut/Pierce 44.1 (148)	Cut/Pierce 28.9 (81)	Cut/Pierce 15.4 (25)	Cut/Pierce 4.5 (6)	Cut/Pierce 3.7 (4)	Cut/Pierce 3.0 (2)	…
3	…	…	…	Suffocation 0.9 (1)	Suffocation 5.5 (8)	Suffocation 2.9 (6)	Suffocation 3.6 (12)	Suffocation 3.9 (11)	Suffocation 1.9 (3)	Motor Vehicle, Traffic 0.8 (1)	Firearm 0.9 (1)	Firearm 1.5 (1)	…
4	…	…	…	…	Fall 1.4 (2)	Fall 1.0 (2)	Firearm 2.7 (9)	Fall 3.6 (10)	Fall 0.6 (1)	Suffocation 0.8 (1)	…	…	…
5	…	…	…	…	Firearm 1.4 (2)	Firearm 1.0 (2)	Fall 1.2 (4)	Firearm 0.7 (2)	Firearm 0.6 (1)	…	…	…	.

*Excludes Other Specified and Classifiable, Other Specified Not EC, and Unspecified Deaths **Age-Adjusted Rate Per 100,000 Population (Number of Injuries)

Self-Inflicted Injury and Gender

Table 32 shows women (n=1514) were more likely to hurt themselves than were men (n=1000). The most preferred mechanism to cause self-inflicted injuries among men and women was poisoning; however, women were two times more likely to poison themselves than were men (Table 32). Cut/pierce was the second leading method for causing injury to self among both sexes. Other mechanisms used to inflict injury to self did not show significant numbers, especially among women.

Figure 33: Self-Inflicted Injury by Gender
Lancaster County, 1992-1999



Assault Injuries

Assault injuries, similar to self-inflicted injuries, constituted only a small proportion of total injury events in Lancaster County. There were 6,284 assault injuries, 3.1 percent of the injury events of assault between 1992 and 1999.

Assault Injury and Cause

Similar to self-inflicted injuries, assault injuries were caused by fewer mechanisms than unintentional injuries (Table 34). More than two thirds of assault related injuries were caused by struck by/against. Cut/pierce was involved in six percent of the cases. Poisoning (the leading causes of self-inflicted injuries) was responsible for less than one percent of assault injuries.

Table 32: Frequency and Proportion of Self-Inflicted Injury by Gender by Cause
Lancaster County, 1992-1999

Male			
Cause	Frequency	Proportion	Crude Rate
Poisoning	540	54.0%	59.9
Cut/Pierce	231	23.1%	25.6
Suffocation	38	3.8%	4.2
Firearm	15	1.5%	1.7
Fall	12	1.2%	1.3
Fire/Burn	2	0.2%	0.2
Other*	162	16.2%	18.0
Total	1000	100.0%	110.9

Female			
Cause	Frequency	Proportion	Crude Rate
Poisoning	1145	75.6%	122.7
Cut/Pierce	251	16.6%	26.9
Fall	7	0.5%	0.8
Suffocation	5	0.3%	0.5
Firearm	3	0.2%	0.3
Fire/Burn	1	0.1%	0.0
Motor Vehicle, Traffic	1	0.1%	0.0
Other*	101	6.7%	942.3
Total	1514	100.0%	162.3

*Includes Other Specified and Classifiable, Other Specified Not EC, and Unspecified Deaths

Assault Injuries:

Table 34 and Figure 34 show some of the major causes of assault injuries. More than three-fourths of these injuries were caused by struck by/against, followed by cut/pierce (6%). Other causes, such as firearm, poisoning, MVT, fire/burn and suffocation show significantly low numbers.

Table 33: Leading Causes* of Self-Inflicted Injury by Gender by Age

Lancaster County, 1992-1999 Gender and Age Specific Rates**

		Age (In Years)									
Gender	Rank	10-14	15-19	20-24	25-34	35-44	45-54	55-64	65-74	75-84	85+
Male	1	Poisoning 22.0 (13)	Poisoning 134.0 (96)	Poisoning 84.8 (88)	Poisoning 93.2 (159)	Poisoning 82.3 (116)	Poisoning 50.1 (40)	Poisoning 23.5 (15)	Poisoning 18.9 (9)	Cut/Pierce 4.4 (1)	Poisoning 16.5 (1)
	2	Cut/Pierce 13.6 (8)	Cut/Pierce 44.7 (32)	Cut/Pierce 61.7 (64)	Cut/Pierce 41.6 (71)	Cut/Pierce 25.6 (36)	Cut/Pierce 18.8 (15)	Cut/Pierce 3.1 (2)	Cut/Pierce 2.1 (1)	Poisoning 4.4 (1)	...
	3	Suffocation 1.7 (1)	Suffocation 8.4 (6)	Suffocation 5.8 (6)	Suffocation 7.0 (12)	Suffocation 5.7 (8)	Suffocation 3.8 (3)	Suffocation 1.6 (1)	Firearm 2.1 (1)	...	...
	4	...	Firearm 1.4 (1)	Firearm 1.9 (2)	Firearm 4.7 (8)	Fall 5.0 (7)	Fall 1.3 (1)	...	...	...	...
	5	...	...	Fall 1.0 (1)	Fall 1.8 (3)	Firearm 1.4 (2)	Firearm 1.3 (1)	...	...	...	...
Female	1	Poisoning 137.1 (77)	Poisoning 382.3 (285)	Poisoning 167.0 (170)	Poisoning 151.8 (253)	Poisoning 169.7 (239)	Poisoning 100.1 (83)	Poisoning 28.8 (20)	Poisoning 11.3 (7)	Poisoning 11.5 (5)	Poisoning 15.8 (3)
	2	Cut/Pierce 24.9 (14)	Cut/Pierce 73.8 (55)	Cut/Pierce 41.3 (42)	Cut/Pierce 46.2 (77)	Cut/Pierce 31.9 (45)	Cut/Pierce 12.1 (10)	Cut/Pierce 5.8 (4)	Cut/Pierce 4.9 (3)	Cut/Pierce 2.3 (1)	...
	3	...	Fall 2.7 (2)	Fall 1.0 (1)	Fall 0.6 (1)	Fall 2.1 (3)	...	Motor Vehicle, Traffic 1.4 (1)	...	Firearm 2.3 (1)	...
	4	...	Suffocation 2.7 (2)	...	Firearm 0.6 (1)	Suffocation 2.1 (3)	...	...	...	...	...
	5	...	...	...	...	...	...	...	...	...	...

*Excludes Other Specified and Classifiable, Other Specified Not EC, and Unspecified Deaths **Age-Specific Rate Per 100,000 Population ***Rate (Number of Injuries)

Table 34: Frequency and Proportion of Assault Injury by Cause

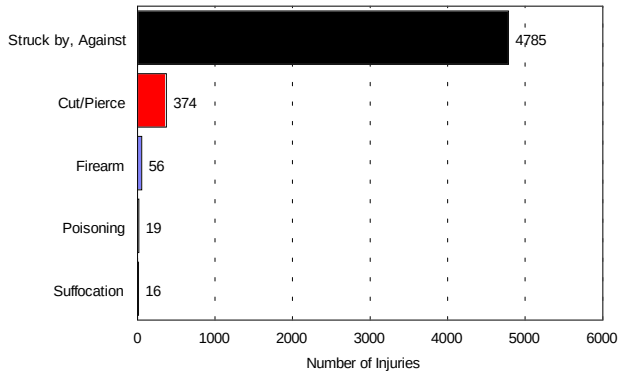
Lancaster County, 1992-1999

Cause	Frequency	Proportion
Struck by, Against	4785	76.2%
Cut/Pierce	374	6.0%
Firearm	56	0.9%
Poisoning	19	0.3%
Suffocation	16	0.3%
Fire/Burn	13	0.2%
Motor Vehicle, Traffic	6	0.1%
Other*	1007	16.0%
Total	6276	100.0%

*Includes Other Specified and Classifiable, Other Specified Not EC, and Unspecified Deaths

Figure 34: Five Leading Causes of Assault Injury

Lancaster County, 1992-1999



Assault Injury and Age

Table 35 shows age distribution of injuries due to assault. More than 85 percent of assault injuries occurred among individuals between 15 and 44 years old. The highest number and rate of injuries were seen among the 25-34 age group (29.6%) followed by the 20-24 age group (21.2%). Other age groups which sustained injuries in substantial proportions due to assault were the 15-19 and the 35-44 with 17.6 and 17.2 percent respectively. The patterns of assault injuries among these age groups were somewhat similar to those observed in self-inflicted injuries.

Table 35: Frequency, Proportion, and Rate of Assault Injury by Age
Lancaster County, 1992-1999

Age	Frequency	Proportion	Age-Specific Rate*
<1	36	0.6%	136.2
1-4	43	0.7%	41.3
5-9	70	1.1%	53.7
10-14	308	4.9%	268.6
15-19	1107	17.6%	760.7
20-24	1334	21.2%	651.8
25-34	1863	29.6%	554.8
35-44	1082	17.2%	385.7
45-54	328	5.2%	202.5
55-64	84	1.3%	63.3
65-74	20	0.3%	18.4
75-84	7	0.1%	10.6
85+	2	0.0%	8.0
Total	6284	100.0%	342.2

*Per 100,000 Population

Table 36: Five Leading Causes* of Assault Injury by Age
Rate and Number of Injuries in Lancaster County, 1992-1999

	Age (In Years)												
Rank	Under 1	1-4	5-9	10-14	15-19	20-24	25-34	35-44	45-54	55-64	65-74	75-84	85+
1	Struck By or Against 15.1 (4)**	Struck By or Against 7.7 (8)	Struck By or Against 33.8 (44)	Struck By or Against 198.0 (227)	Struck By or Against 608.8 (886)	Struck By or Against 498.9 (1021)	Struck By or Against 421.1 (1414)	Struck By or Against 300.1 (842)	Struck By or Against 153.7 (249)	Struck By or Against 52.8 (70)	Struck By or Against 14.7 (16)	Struck By or Against 3.0 (2)	Struck By or Against 8.0 (2)
2	Cut/Pierce 3.8 (1)	Fire/Burn 1.0 (1)	Suffocation 0.8 (1)	Cut/Pierce 5.2 (6)	Cut/Pierce 38.5 (56)	Cut/Pierce 44.5 (91)	Cut/Pierce 39.3 (132)	Cut/Pierce 25.0 (70)	Cut/Pierce 9.3 (15)	Cut/Pierce 1.5 (2)	…	Cut/Pierce 1.5 (1)	…
3	Firearm 3.8 (1)	Poisoning 1.0 (1)	…	Firearm 4.4 (5)	Firearm 9.6 (14)	Firearm 9.8 (20)	Firearm 1.5 (5)	Firearm 2.9 (8)	Fire/Burn 1.2 (2)	Firearm 0.8 (1)	…	…	…
4	Poisoning 3.8 (1)	…	…	…	Poisoning 3.4 (5)	Poisoning 2.9 (6)	Suffocation 1.5 (5)	Fire/Burn 1.4 (4)	Firearm 1.2 (2)	…	…	…	…
5	Suffocation 3.8 (1)	…	…	…	Suffocation 1.4 (2)	…	Poisoning 1.2 (4)	…	Suffocation 1.2 (2)	…	…	…	…

*Excludes Other Specified and Classifiable, Other Specified Not EC, and Unspecified Deaths

**Age-Adjusted Rate Per 100,000 Population (Number of Injuries)

Assault Injury and Gender

Men were about 1.5 times more likely than women to sustain injuries (Figure 35). Both men and women were assaulted more frequently by struck by/against mechanism (78 percent of men, 74 percent of women) than any other mechanism, followed by cut/pierce and firearm (Table 37). There were other means of assault, such as firearm, fire/burn, poisoning, MVT and suffocation; however, they were not significant in numbers.

Figure 35: Assault Injury by Gender
Lancaster County, 1992-1999

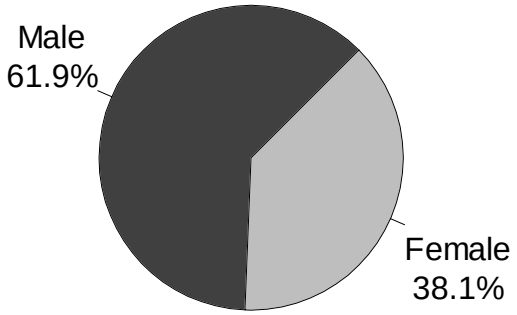


Table 37: Frequency and Proportion of Assault Injury by Gender by Cause
Lancaster County, 1992-1999

Male		
Cause	Frequency	Proportion
Struck by, Against	3025	77.9%
Cut/Pierce	306	7.9%
Firearm	42	1.1%
Fire/Burn	11	0.3%
Poisoning	7	0.2%
Suffocation	7	0.2%
Motor Vehicle, Traffic	5	0.1%
Other*	482	12.4%
Total	3885	100.0%

Female		
Cause	Frequency	Proportion
Struck by, Against	1759	73.6%
Cut/Pierce	68	2.8%
Firearm	14	0.6%
Poisoning	12	0.5%
Suffocation	9	0.4%
Fire/Burn	2	0.1%
Motor Vehicle, Traffic	1	0.0%
Other*	525	22.0%
Total	2390	100.0%

*Includes Other Specified and Classifiable, Other Specified Not EC, and Unspecified Deaths

Table 38 shows some of the leading causes of injuries among men and women according to age. All age groups experienced injuries from struck by/ against means. Injuries from firearms were negligible among both sexes, especially among woman. In general, cut/ pierce assault injuries followed struck by/against in ranking. Other significant means used in causing assault injuries were firearms, poisoning and suffocation.

Table 38: Leading Causes* of Assault Injury by Gender by Age

Lancaster County, 1992-1999 Gender and Age Specific Rates**

		Age (In Years)												
Gender	Rank	Under 1	1-4	5-9	10-14	15-19	20-24	25-34	35-44	45-54	55-64	65-74	75-84	85+
Male	1	Struck by, Against 15.7 (2)***	Struck by, Against 11.2 (6)	Struck by, Against 48.4 (32)	Struck by, Against 290.0 (171)	Struck by, Against 843.4 (604)	Struck by, Against 646.0 (670)	Struck by, Against 496.7 (847)	Struck by, Against 349.9 (493)	Struck by, Against 186.7 (149)	Struck by, Against 69.0 (44)	Struck by, Against 12.6 (6)	Cut/Pierce 4.4 (1)	...
	2	Firearm 7.9 (1)	Fire/Burn 1.9 (1)	Suffocation 1.5 (1)	Cut/Pierce 3.4 (2)	Cut/Pierce 68.4 (49)	Cut/Pierce 73.3 (76)	Cut/Pierce 63.3 (108)	Cut/Pierce 39.0 (55)	Cut/Pierce 16.3 (13)	Cut/Pierce 3.1 (2)	...	Struck by, Against 4.4 (1)	...
	3	Suffocation 7.9 (1)	...	...	Firearm 3.4 (2)	Firearm 18.2 (13)	Firearm 13.5 (14)	Firearm 1.8 (3)	Firearm 4.3 (6)	Fire/Burn 2.5 (2)	Firearm 1.6 (1)	...	...	...
	4	...	...	...	Fire/Burn 1.7 (1)	Suffocation 1.4 (1)	Poisoning 2.9 (3)	Poisoning 1.8 (3)	Fire/Burn 2.1 (3)	Firearm 2.5 (2)	...	...	...	...
	5	...	...	...	Suffocation 1.7 (1)	...	Fire/Burn 1.9 (2)	...	Motor Vehicle, Traffic 1.4 (2)	Suffocation 2.5 (2)	...	...	...	...
Female	1	Struck by, Against 16.6 (2)	Struck by, Against 3.8 (2)	Struck by, Against 18.5 (12)	Struck by, Against 99.7 (56)	Struck by, Against 376.9 (281)	Struck by, Against 344.8 (351)	Struck by, Against 340.1 (567)	Struck by, Against 247.8 (349)	Struck by, Against 120.6 (100)	Struck by, Against 37.5 (26)	Struck by, Against 16.2 (10)	Struck by, Against 2.3 (1)	Struck by, Against 10.5 (2)
	2	Cut/Pierce 8.3 (1)	Poisoning 1.9 (1)	...	Cut/Pierce 7.1 (4)	Cut/Pierce 9.4 (7)	Cut/Pierce 14.7 (15)	Cut/Pierce 14.4 (24)	Cut/Pierce 10.6 (15)	Cut/Pierce 2.4 (2)	...	...	...	...
	3	Poisoning 8.3 (1)	...	...	Firearm 5.3 (3)	Poisoning 6.7 (5)	Firearm 5.9 (6)	Suffocation 3.0 (5)	Firearm 1.4 (2)	...	...	...	...	...
	4	...	...	...	Poisoning 1.7 (1)	Firearm 1.3 (1)	Poisoning 2.9 (3)	Firearm 1.2 (2)	Suffocation 1.4 (2)	...	...	...	...	...
	5	...	...	...	...	Suffocation 1.3 (1)	Suffocation 1.0 (1)	...	Fire/Burn 0.7 (1)	...	...	...	...	...

**Excludes Other Specified and Classifiable, Other Specified Not EC, and Unspecified Deaths* ***Age-Specific Rate Per 100,000 Population* ****Rate (Number of Injuries)*

Injury and Patient Status

Patient status is defined as the place where an injured patient sought medical care immediately after sustaining an injury. A patient in this report will have one of four types of status: 1) emergency room, 2) inpatient, 3) outpatient, and 4) recurring outpatient. Figure 36 shows the patient status at the time of admission after sustaining an injury. Approximately three fourths of all cases (73 percent, n=147,289) were seen in an emergency room. Twelve percent of those injured were outpatient, and 10 percent were inpatient.

Figure 37 indicates that more men than women were seen emergency and outpatient facilities, whereas more women were in inpatient status. Inpatient care is an indicator of severe injuries, which means women were more prone to serious injuries than were men. The severity of injuries is also indicated by the disposition (Table 39). This table indicates that women were more than twice as likely to go to the specialized rehabilitation centers as were men (to recover from injuries). This again indicates that women were more seriously injured than men.

Figure 36: Patient Status at the Time of Hospital Admission
Lancaster County, 1992-1999, Number and Proportion

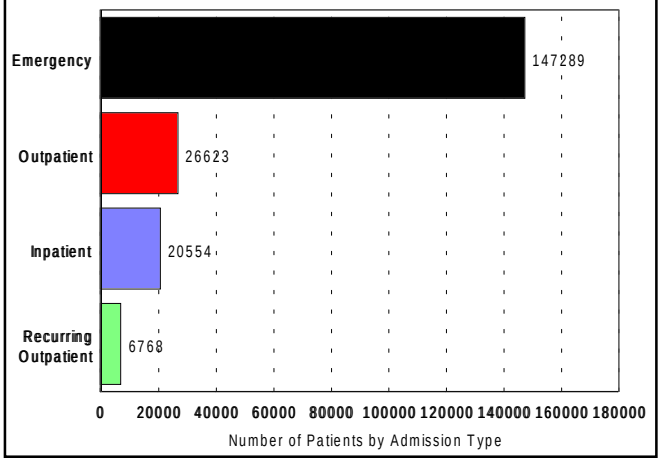
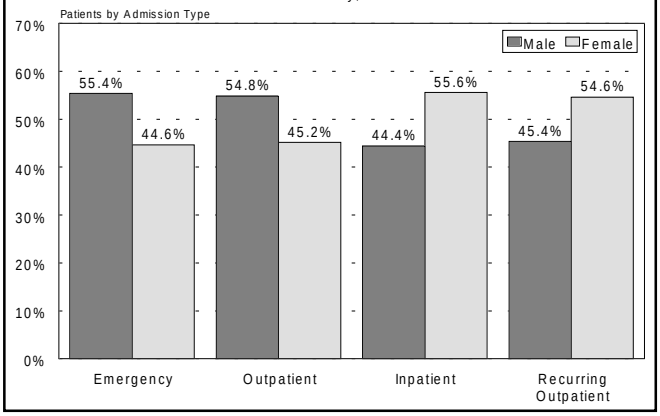
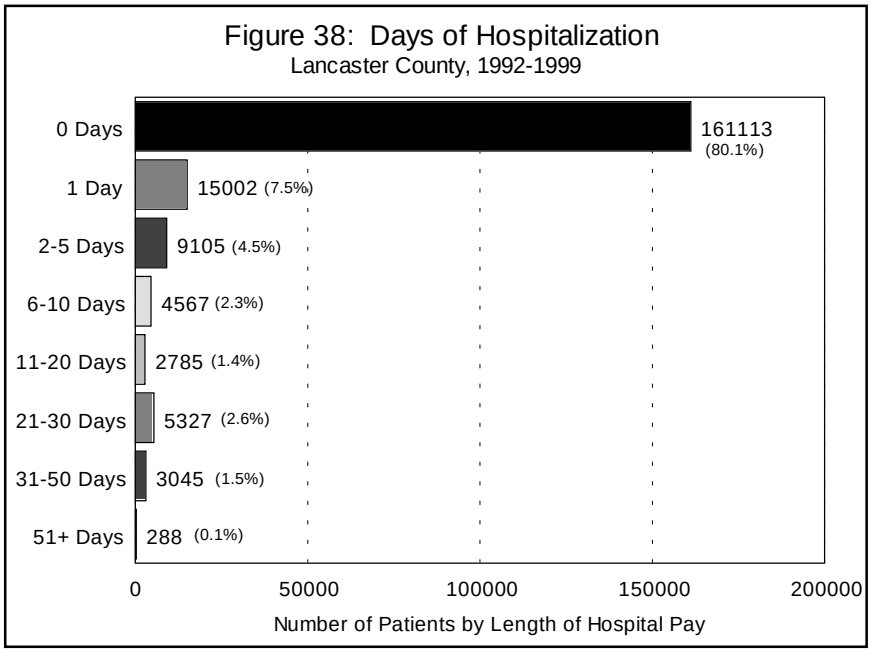


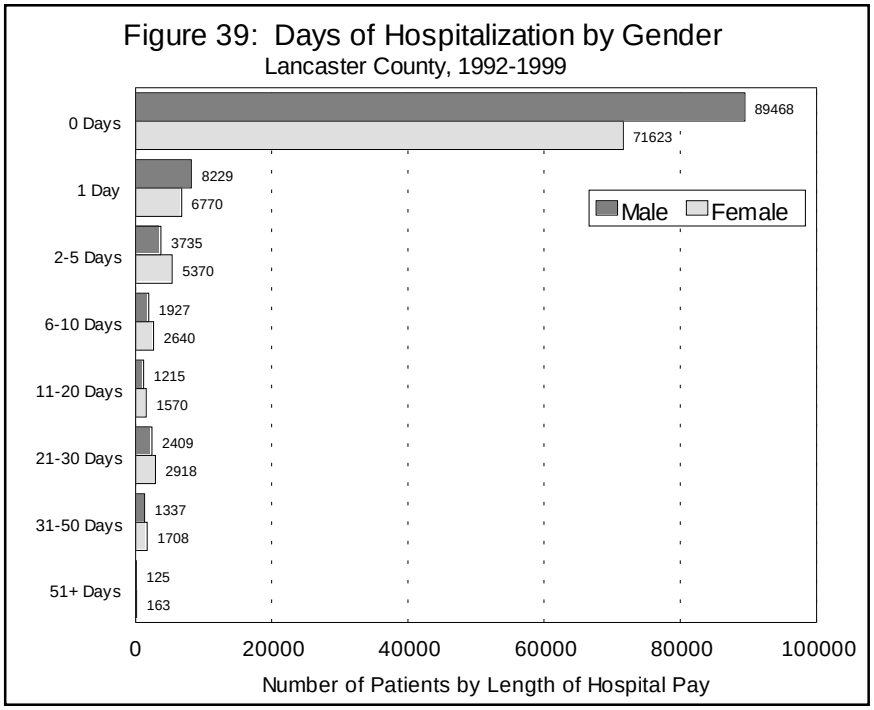
Figure 37: Proportionate Difference between Males and Females for Patient Status at the Time of Hospital Admission
Lancaster County, 1992-1999



Injury and Days of Hospitalization

The stay of patients in the three area hospitals ranged between a few hours to over 200 days. Over 80 percent of those injured were discharged the same day of admission, whereas 7.5 percent stayed one day and 4.5 percent 2-5 days (Figure 38). Interestingly, more women than men spent longer times in hospitals (Figure 39). More than ninety percent of men , compared to 84.5 percent of women, were discharged either the same day or the following day after admission. In other words, more than 15 percent of women spent 2 or more days, whereas less than ten percent of men did the same. This means that more women were severely injured than were men.





Injury and Hospital Disposition

As noted earlier, after having been discharged from the hospital, more than 93 percent of all injury patients went directly home compared with 2.4 percent to specialized rehabilitation centers and 1.6 to other facilities. (Figure 40).

Table 39 reinforces our conclusion that women tended to be more severely injured than men. Women in Lancaster County were two times more likely to be transferred to specialized care than were men.

Figure 40: Disposition of Injured Patients after Hospital Discharge
Lancaster County, 1992-1999

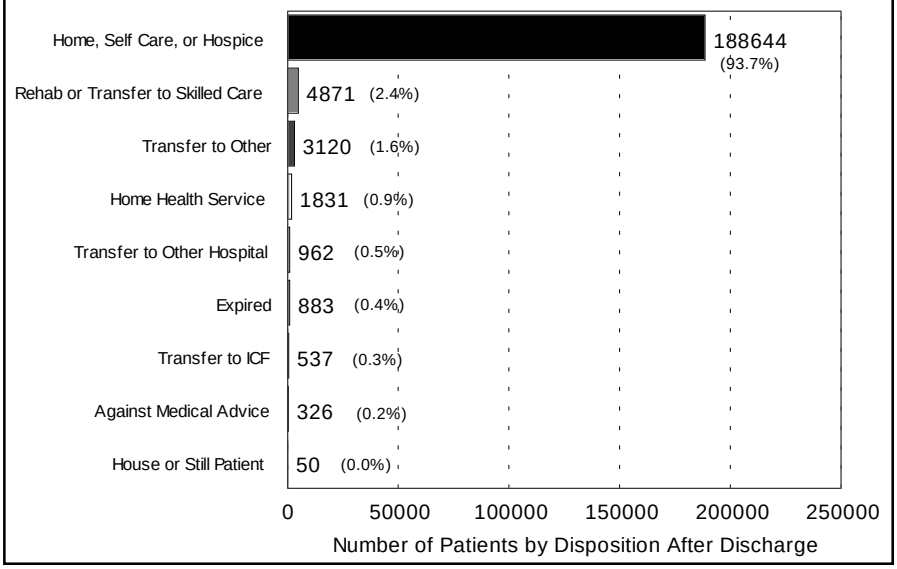


Table 39: Frequency and Proportion of Hospital Disposition by Gender
Lancaster County, 1992-1999

Male		
Disposition	Frequency	Proportion
Home, Self-Care, or Hospice	102776	94.8%
Transfer to Other hospital	512	0.5%
Rehabilitation or Transfer to Skilled Care	1671	1.5%
Transfer to ICF	235	0.2%
Transfer to Other	1804	1.7%
Home Health Service	738	0.9%
Against Medical Advice	203	0.2%
Expired	485	0.4%
House or Still Patient	18.0	0.0%
Total	108442	100.0%

Female		
Disposition	Frequency	Proportion
Home, Self-Care, or Hospice	85844	92.5%
Transfer to Other hospital	450	0.5%
Rehabilitation or Transfer to Skilled Care	3199	3.4%
Transfer to ICF	302	0.3%
Transfer to Other	1314	1.4%
Home Health Service	1092	1.2%
Against Medical Advice	123	0.1%
Expired	398	0.4%
House or Still Patient	32	0.0%
Total	92756	100.0%

Public Health Discussion

Introduction:

It is estimated by the National SAFE KIDS Campaign that 90 percent of unintentional injuries can be prevented. This is especially important when injuries involve children and young adults. Premature death from injuries is often measured in years of potential life lost. Living with a disability resulting from injury affects future productivity to the community, often requiring social and environmental adjustments and economic support.

Prevention begins with accepting responsibility for safeguarding the value to life and limb. Practicing safe behaviors during the formative years of one's life promotes lifelong safety habits. (An example of this is the use of occupant restraint systems while riding in a vehicle. Studies show safety belt use is higher among youth and adults who were consistently buckled up as young children.) The individual and the parent or guardian of a child have the responsibility of initiating and reinforcing safety behaviors.

Parents/guardians and policy makers each have responsibility for providing prevention education and interventions that create safe environments. Examples of this include establishing safe neighborhoods (i.e., adequate lighting and sidewalks in good repair), and enacting seatbelt laws. A combination of education, environmental improvements, engineering modifications, enactment and enforcement of legislation and regulations, economic incentives, community empowerment and program evaluation are effective at reducing the incidence and severity of unintentional injury related death and disability.

Leading Causes of Injury:

Injury is the leading cause of death to Lincoln and Lancaster County children, youth, and young adults under 44 years of age. This includes unintentional injury, undetermined (not coded as intentional or unintentional) injury death, suicide and homicide. The five leading causes of injury to Lincoln and Lancaster County residents are falls, struck by or against, motor vehicle crashes, cut/pierce, and overexertion.

Falls:

Overview:

Falls remain the leading cause of unintentional injury for Lancaster County children and older adults. Fall injuries were more prevalent among females, and females were twice as likely as males to die from fall injuries during the report period. Falls were the leading cause of death for Lancaster County residents aged 75 years and older.

Falls and the Elderly:

Eighty-seven (87) percent of fractures occur among Americans aged 65 years or older. Half of all elderly Americans hospitalized for a hip fracture cannot return home or live independently after the fracture.

The National Center for Injury Prevention and Control states that factors contributing to falls among the elderly include dementia, visual impairment, neurologic and musculoskeletal disabilities, psychoactive medications, and difficulties with gait and balance. Environmental hazards frequently contribute to falls. Examples of hazards are slippery surfaces, uneven floors, poor lighting, loose rugs, unstable furniture, and objects on floors. For people aged 65 and over, 60% of fatal falls occur in the home.

Given the high rates of falls among the older adult population, the Lincoln-Lancaster County Health Department, Lincoln Area Agency on Aging, and the Nebraska Pharmacists Association collaboratively initiated the Brown Bag Medication Review Program. This program offers the opportunity for older adults to consult with a registered pharmacist, public health nurse and health educator concerning potential adverse reactions resulting from use of multiple medications, and other medication-related factors that could impact their health and safety.

Comprehensive older adult educational programs addressing fall risk factors such as making your home and yard "fall proof", encouraging frequent eye exams, and reviewing medications for possible adverse reactions that could affect balance and visual depth perception, can reduce the incidence of falls involving the elderly.

Fall Prevention for Children:

The National SAFE KIDS Campaign reports that the majority of falls occurring to children are from furniture, stairs, baby walkers, playground equipment, windows and shopping carts. Window guards are effective at preventing falls by young children. Baby walkers manufactured after June 30, 1997, must meet mandatory standards to be certified as safe. Protective surfacing under and around playground equipment can prevent the incidence and reduce the severity of playground fall-related injuries. Playground equipment guidelines have been developed and numerous states have enacted playground safety legislation mandating many of these guidelines. A Lincoln-Lancaster County Health Department Environmental Health Specialist received national certification in playground safety to assist local childcare providers in purchasing, assembling, and maintaining safe playground equipment.

The following recommendations will reduce the risk of childhood fall injuries:

- Never use baby walkers on wheels. Use stationary activity centers or walker alternatives.
- Use safety gates at the top and bottom of stairs if there are infants or toddlers in the home.
- Move chairs and furniture away from windows. Consider installing window guards on windows located on the ground floor and up, unless designated as emergency fire exits.
- Avoid asphalt, concrete, grass and soil surfaces under playground equipment. Acceptable loose-fill surfacing, such as hardwood fiber mulch or chips, pea gravel, fine sand or shredded rubber, should be maintained at a depth of 12 inches and should extend a minimum of 6 feet in all directions around stationary equipment.

Struck By/Against:

Overview:

Lancaster County children, youth and young adults are at greatest risk of struck by/against injuries. Males were two times more likely than females to seek hospital care for an unintentional struck by/against injury. National data indicates a significant percentage of struck by/against injuries are related to sports and recreational activities.

Prevention of Unintentional Injuries:

Protective equipment, safe play conditions (e.g. field surfacing and maintenance) and development and enforcement of safety rules help reduce the number and severity of sports and recreational injuries. Children develop at different rates, both physically and psychologically. Children who do not wear or use protective equipment are at greater risk of sustaining sports-related injuries. Lack of awareness for potential injury, inappropriate or unavailable equipment, and lack of money to purchase equipment are some of the reasons children do not wear protective gear.

Make sure proper physical and psychological conditioning, use of appropriate safety equipment, a safe playing environment, adequate supervision, and safety rules that are enforced are included in any sports program. Match and group children according to similar skill level, weight and physical maturity, especially for contact sports.

Prevention of Intentional Injuries:

Development of conflict resolution and anger management skills among children, youth, and adults has proven effective in reducing assault-related injuries.

In 1997, 200 members of a focus group on community violence pro-actively endorsed the development of a local Safe Night-Youth Violence Prevention effort. Safe Nights provide youth with structured, supervised recreational activities on weekend evenings when teens are at greatest risk of involvement in violent acts. Central to each Safe Night activity is a "teachable moment" that engages youth in conflict resolution exercises. The Safe Night concept has been well-received by the faith community, school systems, businesses, and most importantly, the youth of Lincoln and Lancaster County. Over 100 local Safe Night events have been held, with over 3,000 youth participating.

Motor Vehicle Traffic:

Overview:

Everyone using streets and roadways is at risk of involvement in a motor vehicle crash. This includes pedestrians, joggers, and cyclists as well as motor vehicle operators. Motor vehicle crashes were the leading cause of unintentional injuries among Lancaster County residents 20-24 years of age. Males, 15-19 years of age, are at greatest risk of receiving a fatal motor vehicle traffic injury. Although females, ages 15-19, had a higher rate of motor vehicle traffic injuries than males the same age, they had fewer fatal injuries. One reason for this could be the higher rate of seatbelt use by females during this time period as revealed in the 1999 Youth Risk Behavior Survey.

Economic Impact:

Vehicle occupant restraint systems save thousands of lives each year. Safety belts, when used in conjunction with air bags, reduce the chance of being fatally injured by 45-55%. Every dollar spent on a child safety seat saves this country $32. Child safety seats are extremely effective when correctly installed and used in passenger cars, reducing the risk of death by 71% for infants and by 54% for children ages 1 to 4. Safety seats reduce the need for hospitalization by 69% for children ages 4 and under. Adult safety belts do not adequately protect children ages 4 to 8 (about 40 to 80 pounds) from injury in a crash. A federally approved booster seat is recommended for children in this age group as they transition from a child safety seat to the vehicle safety belt system. Child occupant protection and safety belt use laws are proven effective at increasing restraint use.

Every dollar spent on a bike helmet save $30 in direct medical costs and other costs to society. If 85% of all child cyclists wore bicycle helmets in one year, the lifetime medical cost savings could total between $109 million and $142 million. A review of hospital discharge data in Washington state found that treatment for nonfatal bicycle injuries among children ages 14 and under costs an average of $218,000 per child.

Prevention:

Air bags, combined with lap/shoulder safety belts, offer the most effective protection available today for adult passenger vehicle occupants. Always use child safety seats and/or safety belts correctly every time you ride. Restrain children ages 12 and under in a back seat. Infants, until at least 1 year old and at least 20 pounds, should ride in rear-facing child safety seats. Never put a rear-facing infant or convertible safety seat in the front passenger seat of a vehicle with an active passenger air bag.

Always wear a bicycle helmet every time and everywhere you ride. Wear the bicycle helmet correctly, fitting comfortably and snugly, sitting on the top of the head in a level position, with the helmet straps always buckled. Learning the rules of the road and obeying all traffic laws is a must. Ride the bicycle on the right side of the road or street, with traffic, using appropriate hand signals.

Local Prevention Efforts:

Grants from the Nebraska Office of Highway Safety and the National Association of City and County Health Officials have allowed the Lincoln-Lancaster County Health Department to take a leadership role in addressing traffic safety concerns. During the past 18 years, coalitions have been formed to gain a broad community perspective of the many factors involved with traffic safety; public information campaigns such as the "Teens on the Road" series have been developed to increase the teen driver's awareness of the dangers associated with driving in both rural and urban settings; the Youth Driver Training Program was created to help parents and teenagers work together through the often challenging stages of learning how to drive; a comprehensive child passenger safety program was initiated to ensure proper installation and use of child safety restraints; the Lincoln-Lancaster County Injury Surveillance System was created to monitor the prevalence of local injury; and several state laws and local ordinances (i.e. Nebraska seat belt and child passenger laws, local school crosswalk and bicycle ordinances) were enacted or enhanced.

Annual community-based bicycle safety events sustain the educational efforts of the "Keep A Head - Wear a Helmet" bicycle safety campaign initiated in 1993 by the Lincoln-Lancaster County Injury Prevention Coalition. The outcome of this multifaceted campaign was a 30% reduction in local pedal cycle-related head injuries and increased bicycle helmet use from 1993-1997. The Lincoln-Lancaster County Health Department has distributed approximately 5,000 free and low-cost bicycle helmets through local bicycle rodeos, businesses, churches, and community events since 1993.

Cut/Pierce:

Overview:

Lancaster County males, 15-19 years of age are at greatest risk of a cut/pierce injury. Males sustained over twice as many unintentional cut/pierce injuries as females.

Prevention:

A child's curiosity and an adolescent's perceived invincibility and immaturity put them at greater risk of an unintentional cut/pierce injury. Careful monitoring of the use of sharp or pointed household items by children, and proper training on the use of electric appliances and tools and power equipment can prevent these very common and often serious injuries.

The following recommendations will reduce the risk of cut/pierce injuries to children and adolescents:

- Keep knives, razors, scissors, graters and other cutting utensils locked out of children's reach. Do not use sharp products when near children.
- Do not allow young children to use appliances with accessible moving blades or parts.
- Use child-resistant interlocks that come with power tools. Unplug appliances and tools when not in use and store them locked out of children's reach.
- Attach corner or cushion guards to furniture corners, fireplace hearths and other sharp structural features in the home.

Securely lock into place any folding items used for children, such as folding tables, chairs, and strollers to prevent crushing and amputation injuries. Make sure children keep their hands and fingers away from any

folding mechanisms. Secure bookcases, shelving and heavy furniture to walls. Use appropriate broad-based carts for TVs, microwaves, and other appliances. When storing items, put heavier things on bottom shelves or in bottom drawers rather than the top ones. Avoid using pedestal tables in homes with young children. Ensure that garage door openers have an automatic reverse feature. Instruct children that they must not play with garage doors or door openers; that garage doors are not toys.

All families, regardless of gun ownership, should understand the risk associated with child access to guns and be advised of firearm safety measures. Emphasize to children the dangers of guns and the fact that they are not toys. Gun owners should always store firearms unloaded and locked up, with ammunition locked in a separate location, out of reach of children. Gun owners should use gun locks, lock boxes and/or gun safes. Keep gun storage keys and combinations hidden in a separate location. All parents should teach children never to touch a gun and to tell an adult if they find a gun or see another child with a gun.

Overexertion:

Overview:

Overexertion injuries occur to all age groups. Children and youth often experience overexertion through sports activities. The majority of organized sports injuries includes overexertion caused by stressing the body with elements of time, temperature, conditioning and preparedness. Adult overexertion injuries are often the result of excessive physical activity when the body is not adequately conditioned. Common causes of overexertion include excessive yard work, walking, jogging, biking, snow shoveling, and heavy lifting.

Prevention:

The effectiveness of preventing sports-related overexertion injuries through maintaining adequate hydration levels and pre-game stretching and flexibility warm-ups is well documented. In response to increasing numbers of local youth participating in organized team sports (i.e., soccer, basketball, football, softball, etc.), the Lincoln-Lancaster County Health Department developed brochures addressing prevention of injuries specific to each sport and educational flyers on the importance of adequate body hydration and pre-game warm-ups. This information is distributed to over 2,000 volunteer coaches and even coordinators at coaches' clinics and included in the packet of materials coaches receive at the beginning of the season.

For most sports, and for most children, the upper level of volume of training should be 18-20 hours a week. Some children can safety train at higher levels without harm, but they should be monitored by a knowledge-able sports physician at three month intervals to ensure that no abnormalities of growth, maturation or structure are occurring. Proper warm-ups, which include gentle stretches, will reduce the "shock effect" on muscles, joints, and the cardiovascular and respiratory systems after a long period of physical inactivity.

Proper lifting, carrying and shoveling techniques are all learned behaviors. To avoid suffering an overexer-tion injury, these techniques must be consistently practiced, whether at home or on the job.